CORONERS COURT
OF NEW SOUTH WALES

Inquest:	Inquest into the death of Joshua Tobias Szczudlo
Hearing dates:	31 May, 1 June, 7 June to 11 June 2021
Date of findings:	2 December 2021
Place of findings:	NSW Coroners Court - Lidcombe
Findings of:	Magistrate Elizabeth Ryan, Deputy State Coroner
Catchwords:	CORONIAL LAW – death of man in hospital following shoulder surgery – cause of death – was clinical care adequate – policies and procedures for bariatric patients.
File number:	2016/87432

Representation:	Counsel Assisting: L Whalan of Senior Counsel with M Robinson of Counsel, i/b NSW Crown Solicitor. V Szczudlo: C Tawagi, Legal Aid. Dr H Y Lam: B Bradley of Counsel i/b MDA National. Dr J Karam: G Gemmell of Counsel i/b Moray & Agnew. Dr S Satchi and Dr R Walker: S Beckett of Counsel i/b Avant Law. Dr F Re: L McFee of Counsel i/b MDA National Insurance. Dr P Weenink: K Edwards of Counsel i/b Ebsworth Lawyers. Clinicians at Liverpool Hospital and South Western Sydney Local Health District: P Rooney of Counsel i/b McCabe Curwood. Registered Nurses M Halaguena, S Murray and J Goldrick: B Haider, NSW Nurses and Midwives Association.
Findings:	**Identity** The person who died is Joshua Szczudlo. **Date of death**: Joshua Szczudlo died on 19 March 2016. **Place of death**: Joshua Szczudlo died at Liverpool Hospital. **Cause of death:** Joshua Szczudlo died as a result of a fatal cardiac arrhythmia, secondary to acute kidney injury. Other conditions may have contributed to his fatal arrhythmia but the extent of their contribution is uncertain. **Manner of death:** Joshua Szczudlo died in hospital after undergoing surgery to repair a shoulder fracture.

Section 81(1) of the *Coroners Act 2009 (NSW)* [the Act] requires that when an inquest is held, the Coroner must record in writing his or her findings as to various aspects of the death.

These are the findings of an inquest into the death of Joshua Szczudlo.

Introduction

1. Joshua Tobias Szczudlo was only 33 years old when he died on 19 March 2016. He had been admitted to Liverpool Hospital on 17 March 2016 for surgery to repair his fractured shoulder. Tragically he died two days later.

2. Joshua's death came as a terrible shock to his family. They have been left with many questions as to how this could have happened.

3. At autopsy, forensic pathologist Dr Bernard I'Ons was unable to ascertain the cause of Joshua's death. He noted strong evidence of renal failure, and recommended that expert evidence be sought as to what had caused or contributed to this condition. In addition Dr I'Ons noted that Joshua was morbidly obese and there was evidence of an enlarged left ventricle and hypertensive change to his heart. He recommended further medical investigation in these areas.

4. For these reasons an inquest was held into the circumstances of Joshua's death. In addition, given the unexpected nature of Joshua's death there was a need to examine the adequacy of his clinical management during and following his surgery.

5. Three key issues were examined at the inquest.

6. The first was the adequacy of Joshua's clinical management and monitoring when he presented at Liverpool Hospital on 16 March 2016, and during his admission there from 17-19 March 2016. Areas for examination were:

    - whether appropriate steps were taken to assess and manage Joshua's risks in relation to surgery and anaesthesia, given his very large body weight and comorbidities
    - Joshua's postoperative management, and whether he ought to have been admitted to an intensive care unit.

7. The second issue was the causal or contributing role, if any, of the following in Joshua's death:
    - the administration of oral and intravenous opioids
    - acute renal failure
    - obstructive sleep apnoea
    - hyperkalaemia
    - rhabdomyelosis.

8. The third issue was the adequacy of South Western Sydney Local Health District's policies and procedures relating to the treatment of bariatric patients.

9. The court was assisted with evidence from many of the clinicians who had treated and cared for Joshua. In addition the court heard expert evidence from the following specialists:
   - Associate Professor Richard Lee, intensive care specialist and anaesthetist
   - Professor Ian Seppelt, specialist in anaesthesia and intensive care medicine
   - Associate Professor Paul Forrest, cardiothoracic anaesthetist
   - Professor Desmond Bokor, orthopaedic surgeon
   - Dr Gavin Pattullo, anaesthetist and pain management specialist
   - Professor Laurie Howes, toxicologist, pharmcologist and cardiologist
   - Professor Olaf Drummer, forensic pharmacologist and toxicologist.

10. Each of the above witnesses has combined specialties or sub-specialties to provide expert evidence on the causes or contributing factors in Joshua's death.

Joshua Szczudlo's life

11. Joshua belonged to a large and loving family. He was born on 24 May 1982 to parents Veronica and Richard, and he had four younger brothers Jacob, Daniel, Joel and Jarrod. Like his brothers, at school Joshua excelled at sport, in particular athletics, rugby league and swimming.

12. From about the age of 14, Joshua worked as a lifeguard at municipal swimming pools. He maintained a lifelong passion for the Wests Tigers Rugby League team and he regularly went to weekend games with his brothers.

13. In his late teens Joshua met Cynthia Stanshall, and they were together for the remaining 13 years of his life. They were overjoyed when Cynthia gave birth to their baby son Chevy on 1 February 2016, just six weeks before Joshua died. In her written tribute to Joshua, Cynthia recalled Chevy's birth as *'the best day of our life',* and explained that it was Joshua who chose their baby's name. In her words: *'I'm so glad we did, as it is now a very special name as his dad gave it to him'.*

14. At the close of the evidence, Joshua's uncle Bernard Duffy read out loving and deeply affectionate tributes from family members including Cynthia. Joshua's family honoured his big heart and his strong sense of humour, his generosity, his love of music, and his joy at becoming a father. His death has filled them with grief and has left a big hole in their lives, especially for Cynthia and his mother Veronica.

15. Joshua's loved ones understand that this inquest will not bring Joshua back to them. But they wanted to know how it was that he died so unexpectedly, after going into hospital for shoulder surgery.

Joshua's shoulder fracture

16. Despite his love of sport, in his early twenties Joshua ceased to be fit and active. He gained weight and underwent surgery to his knee in 2008. He also began to drink a large amount of alcohol. He was diagnosed with hypertension for which he was prescribed medication, and although he never had sleep tests he was of the belief that he suffered sleep apnoea.

17. Joshua's brother Daniel believed that the birth of Chevy in 2016 was a strong motivation to Joshua to lose weight and to commit to a healthier life.

18. While he was at work on 2 March 2016 Joshua fell and injured his left shoulder. A colleague took him to Fairfield Hospital, where an x-ray confirmed that he had fractured his left humerus. This is the long bone in the upper arm which runs from the shoulder to the elbow.

19. Joshua's mother Veronica took him to Liverpool Hospital for a CT scan of the injury. It was established that he required surgery, being an open reduction and a fixation of the left proximal humerus. Orthopaedic surgeon Dr Richard Walker was to perform the operation.

20. Dr Walker was keen for the surgery to take place as soon as was safely possible. At the inquest he explained that repair surgery generally needs to be performed within a fortnight of the fracture, to prevent the bone from attempting to heal itself. This will make the repair surgery lengthier and more complicated.

21. On 3 March 2016, Joshua was discharged from Liverpool Hospital with opioids Endone and Oxycontin for pain relief, as Dr Walker's operating was fully booked that day. Although Dr Walker had a space for surgery at Sydney South West Private Hospital the following day on 4 March 2016, Joshua's Work cover insurer had not yet approved his medical cover. Dr Walker rescheduled the surgery for 10 March 2016 at Liverpool Hospital.

22. In phone consultations with Joshua, Dr Walker explained the general risks associated with surgery, including that obesity increases those risks. However on 10 March 2016 the surgery was again unable to proceed, as Joshua had developed an upper respiratory tract infection.

23. By 15 March 2016 Joshua's condition had somewhat improved. A plan was formed for him to present the following day to Liverpool Hospital's Pre-Anaesthetic Clinic. The purpose was to assess whether he was fit for surgery on 17 March 2016, which was the next available date.

The pre-anaesthetic assessment

24. Joshua presented at the Pre-Anaesthetic Clinic on 16 March 2016. He was first attended by Enrolled Nurse Lucy May. She attempted to measure Joshua's weight but could not, because the clinic's scales were only able to measure up to 150kgs weight. In a Patient Health Questionnaire completed by Joshua prior to the assessment, Joshua had estimated his weight as 184kgs.

25. The Clinic Coordinator, Registered Nurse Maria Halaguena, documented Joshua's weight as *'approximately 195kgs'*. At the inquest she could not recall the basis for this entry, but she thought it was most likely as a result of having asked Joshua what his weight was. This if correct would mean that Joshua's body mass index was greater than 50, placing him in the category of *'super morbidly obese'*.

26. Joshua was then assessed by anaesthetic fellow Dr Hai Yen Lam. Dr Lam noted that Joshua had risk factors for anaesthesia of obesity and hypertension. In addition she strongly suspected that he had Obstructive Sleep Apnoea [OSA], given his weight. OSA and obesity both increase risk with anaesthesia and surgery, as they impact on the patient's ability to deliver oxygen to body tissues. Added to this, Dr Lam was concerned that Joshua still had a dry cough and a wheeze from his recent respiratory infection.

27. Dr Lam conveyed these concerns to surgeon Dr Walker in a phone conference. Dr Walker remained concerned about delaying Joshua's repair surgery, and wished for it to proceed if this could be done safely. Joshua too was keen for the surgery to go ahead, explaining to Dr Lam that he had a newborn son and wanted to be able to hold him and play with him as soon as possible.

28. Dr Lam and Dr Walker agreed on a plan for Joshua to attend the hospital the next day, and to be assessed by consultant anaesthetist Dr Felicity Re. If Dr Re considered he was fit for anaesthesia, the surgery would proceed the same day. In the meantime Joshua was given fasting instructions and a script for a bronchodilator to maximise his lung function.

29. As can be seen, the pre-anaesthetic assessment did not provide any objective evidence of Joshua's exact weight, due to the incapacity of scales at the clinic. This raised concern as to the ability of hospital staff to accurately measure the weight of patients who are obese or morbidly obese.

30. At the inquest the court heard that since Joshua's death, the Pre-Anaesthetic Clinic has acquired a range of bariatric floor scales which would have been able to measure Joshua's weight.

The lead up to Joshua's surgery

31. Joshua returned to hospital on 17 March 2016, having fasted from 8.30pm the previous evening. Registered Nurse Denise Treglown measured his blood pressure as 125/56. He also had an electrocardiogram, the results of which were not abnormal.

32. Joshua was then examined by Dr Bernard Roach, who was in his final year of training as a specialist anaesthetist under the supervision of Dr Felicity Re. Dr Re too examined him. They agreed that Joshua was morbidly obese, with additional risk factors of hypertension, probable sleep apnoea and a resolving respiratory tract infection.

33. Dr Roach explained to the court that the presence of sleep apnoea in a patient meant that care was needed with the selection and timing of anaesthetic drugs. Post operatively too, there was a need for increased monitoring for the effects of opioid analgesics on the patient's respiratory system.

34. Dr Re and Dr Roach then discussed Joshua's case with Dr Walker, who again expressed his view that delaying the repair surgery would be *'very sub optimal'* from the orthopaedic perspective.

35. Dr Re concluded that Joshua was fit for surgery, with appropriate anaesthetic management.

The repair surgery

36. Joshua's surgery commenced at about 2.30pm that day and was completed by 5.00pm. Dr Walker, Dr Re and Dr Roach all considered that the surgery and anaesthesia proceeded well, with no complications.

37. Throughout the operation Joshua was in a semi upright position, known as the *'beach chair position.'* This involves the patient lying on his or her back, with the upper body elevated to between 30 and 45 degrees. The court heard that this was a common position for shoulder surgery. In accordance with common practice, a gel mattress was used to protect against excess pressure on the patient's buttocks.

38. Dr Re considered that Joshua was stable throughout the surgery. She used an infusion of the vasoconstrictor Metaraminol to maintain his blood pressure. Joshua was intubated, apparently without difficulty, and given a nerve plexus block in addition to general anaesthesia. The nerve plexus block was to control his pain throughout the operation and for a period of time afterwards. This was considered important in Joshua's case, as it would reduce his need for post operative opioid pain relief, and thus reduce the accompanying risks to his respiratory system.

39. Intravenous fluids were administered to Joshua throughout the procedure. At 2.00pm Joshua received one litre of Compound Sodium Lactate, known as Hartmann's Solution. A second litre of Hartmann's Solution was administered at 4.00pm. Dr Re also directed that Joshua receive a third litre of fluid, to commence once the second litre had been administered. She said this was intended *'to tide Joshua over while he was starting to eat and drink'.*

40. I mention this because prior to the inquest, concerns had been expressed that Joshua did not receive sufficient fluids during the operation. The evidence at

inquest established that he had received more fluids than was initially thought. I will return to this issue later in the findings.

In the Recovery area

41. Following his procedure Joshua was taken to the Recovery area. Here he reported to Dr Roach and to Re that he had buttock pain. Dr Roach told the court that it is common for patients to experience pain in this area following surgery in the beach chair position. In Joshua's case, he recalled that Joshua described the pain as *'not severe'* and *'mild'*.

42. The evidence that Joshua reported buttock pain is significant because in the opinion of Associate Professor Lee, the condition of rhabdomyolysis was one of the contributors to his death. Rhabdomyolysis occurs when muscle breaks down, causing a rise in the enzyme creatine kinase which can lead to renal impairment. I will return to this issue later in the findings.

43. Registered Nurses Dominique Hales and Stephanie Murray cared for Joshua while he was in the Recovery area. It is notable that neither nurse recalled or documented that he had complained to them of buttock pain. RN Murray was emphatic that had he done so she would have recorded it. I accept the submission of Counsel Assisting, that both nurses presented as diligent nurses and credible witnesses whose evidence on this point ought to be accepted. The inference follows, that Joshua did not mention buttock pain to them.

44. While Joshua was in the Recovery area, nursing staff set up a system of Patient Controlled Analgesia [PCA] for him. This had been directed by Dr Re, who was aware that shoulder surgery usually causes strong post operative pain.

45. PCA is a method of pain control which gives patients the ability to administer their own pain relief. This is via a computerised pump which is connected to the patient's intravenous line, and which contains a syringe of pain medication. When the patient presses a button, the pump delivers a pre-set dose of analgesia. With proper pre-setting of the total dose patients are unable to overdose themselves.

46. In Joshua's case, Dr Re directed that he receive PCA of morphine at a pre-set rate that would not allow him to receive more than 24mgs per hour. Joshua was able to receive PCA through a cannula which had been fixed in his right arm, and through which he was also receiving fluids.

47. Dr Re's chose Joshua's maximum PCA doses on the basis of her assumption that he was opioid tolerant and had been using prescription Oxycontin 20mg twice daily. In fact the amount he had been taking was 10mg twice daily. At the inquest Dr Re said that had she known this she might have gone for *'a slightly smaller dose'*, but that Joshua's large size meant that he needed *'decent pain relief'*.

48. In addition to PCA morphine Dr Re prescribed oral oxycodone for Joshua, as required. She acknowledged that she had done this in error, and that ordinarily this would not be administered to a patient who was using PCA morphine.

49. Dr Re also ordered that Joshua receive supplemental oxygen for the duration of the time he was using PCA. Patients using PCA are usually required to have additional oxygen, due to the risk of respiratory depression that accompanies opioid use. Patients on PCA also receive regular monitoring of their oxygenation and fluids. NSW Health policy requires that such patients be monitored on an hourly basis for the first six hours after surgery, then at twice hourly intervals.

50. At the inquest Dr Re and Dr Roach acknowledged that PCA increases breathing risks for patients like Joshua who are likely to be suffering sleep apnoea. However they were reassured that due to his use of PCA, Joshua would receive regular monitoring of his respiratory function.

51. RN Hales commented that while he was in her care Joshua did not like the mask which had been fitted to provide his supplemental oxygen. For this reason the mask was replaced with nasal prongs. He did not have an indwelling urinary catheter, meaning that when he needed to pass water he would have to use a bottle.

52. Neither RN Hales nor RN Murray recorded that Joshua passed any urine while he was in the Recovery area. Both nurses were aware that when a patient passes urine into a bottle, it is expected that the amount is documented. I accept that the absence of a relevant record is persuasive evidence that Joshua did not pass urine during this period.

53. I mention this feature, because the evidence shows that after Joshua left the Recovery area there were deficiencies in the recording of his urine output. This created real difficulties in resolving one of the issues at inquest, namely whether his fluid levels were abnormally low post operatively and if so, whether this contributed to his death.

Conclusions regarding Joshua's pre operative, intraoperative and immediate post operative care

54. I accept the submission of Counsel Assisting, that the evidence at inquest did not provide any basis for criticism of the care and treatment provided to Joshua by Dr Walker, Dr Re or Dr Roach.

55. As regards Dr Walker's pre-operative and intraoperative care of Joshua, the court was assisted by the expert report and oral evidence of orthopaedic surgeon Dr Desmond Bokor. Dr Bokor has extensive clinical experience in public and private hospitals, and has a subspecialty in shoulder and elbow surgery.

56. At the inquest Dr Bokor expressed the following opinions:

- repair surgery was required for Joshua's complex shoulder fracture. It needed to be performed within 14 days of his fracture occurring;
- Dr Walker had taken reasonable steps to prepare Joshua for the surgery
- the technique Dr Walker employed to repair Joshua's fracture was in accordance with the technique Dr Bokor would expect, as was the use of the beach-chair position; and
- Dr Walker's orders for Joshua's postoperative care were acceptable.

57. I accept that Dr Walker had cogent reasons for urging that Joshua's repair surgery proceed within a short time frame of his fracture occurring, and that he took appropriate steps to advise Joshua of the risks associated with it. Dr Walker also consulted Dr Re and Dr Roach about Joshua's risks and the steps needed to optimise his respiratory condition in readiness for the surgery. At the close of his evidence Dr Walker expressed sincere condolences to Joshua's family.

58. In relation to Dr Re and Dr Roach, I accept the further submission of Counsel Assisting that the decisions they made and the care they provided to Joshua were appropriate and played no role in his death.

59. Dr Re and Dr Roach informed themselves about Joshua's increased risk of complications due to his obesity, likely sleep apnoea and upper respiratory tract infection. They appropriately took into account that Dr Walker considered the surgery necessary, and also that Joshua himself was keen for it to proceed. Dr Re concluded that Joshua was fit for anaesthesia on 17 March 2016, with appropriate clinical management. There is no basis to criticise the reasonableness of that decision, or Dr Re's and Dr Roach's management of Joshua pursuant to that plan.

On the orthopaedic ward: the night of 17 March 2016

60. Joshua was considered ready to leave the Recovery room at about 6.10pm. His PCA pump had been set up to deliver morphine as pain relief, although he did not use it while he was in Recovery. His pain was most likely still being controlled by the nerve block he had received prior to surgery.

61. Joshua was taken to an orthopaedic trauma ward for his postoperative care. An issue for examination at the inquest was whether as a high risk patient, it would have been appropriate for him to have been cared for in the Intensive Care Unit [ICU]; or at the least, whether he ought to have received a review by an ICU doctor. This issue will be considered later in these findings.

62. RN Murray handed Joshua's care over to staff on the orthopaedics ward at around 6.25pm. She also co-signed the administration of the third litre of fluid which had been directed by Dr Re for his post-operative care. This indicates that by this stage Joshua had already received two litres of fluid, in addition to any fluids that he may have been sipping.

63. Joshua's care was allocated to Registered Nurses Rowaida Kardoli and Sunila Sharma. At the inquest RN Kardoli said she still remembered Joshua, recalling that Joshua's little son Chevy was brought in to visit that evening.

64. RN Kardoli told the inquest she had regarded Joshua as a high risk patient given his morbid obesity and hypertension. She commenced taking Joshua's vital observations at 6.40pm. These were all were within the normal range.

65. At 7.30pm RN Kardoli recorded that Joshua had passed 100mls urine into a bottle. Then at about 8.40pm she noted that Joshua's blood pressure was low, at 86/70. This low systolic reading indicated the possibility of hypotension. She asked for Joshua to be reviewed by the junior medical doctor responsible for the orthopaedic and cardiothoracic wards that evening, Dr Petrus Weenink.

Dr Weenink's review

66. Dr Petrus Weenink arrived promptly onto the ward. He told the court that he tried to manually measure Joshua's blood pressure, but was unable to: even using a large blood pressure cuff he could not get a clear reading.

67. In his report, cardiothoracic anaesthetist Dr Forrest commented that Dr Weenink ought to have confirmed the accuracy of Joshua's low blood pressure reading.

68. When blood pressure is unable to be measured using cuffs, it is possible to do so by inserting a catheter into the patient's artery. Dr Weenink considered this option but decided against it, due to the risk of infection. At the inquest Dr Weenink told the court that when he reflected on his inability to obtain an accurate reading of Joshua's blood pressure, the only extra step he could have taken was to seek the assistance of a more senior colleague.

69. However Dr Weenink did not escalate Joshua's care to a more senior doctor, explaining that he had suspected the systolic reading of 86 was incorrect. This was because Joshua appeared well perfused with no other signs of hypotension, hypovolemia (low blood volume), or fast heart rate. Dr Weenink said that had a subsequent blood pressure reading also been low, he would certainly have sought a senior medical review.

70. Despite Joshua appearing otherwise well, Dr Weenink took the precaution of ordering another litre of fluids to be delivered to him over a short period of time, to correct any possible hypovolemia. He also directed nursing staff to call him if there were any further concerns.

71. I note that by 9.40pm Joshua's blood pressure reading was within normal range, and remained so throughout the night and the next day. It appears therefore that if in fact Joshua had been hypotensive, the steps taken by Dr Weenink to manage this issue resolved it.

72. At the close of evidence it was submitted on behalf of Dr Weenink that no policy or protocol required that a doctor seek more senior medical assistance in such a situation. In addition, in a report dated 20 January 2021 Dr Steven Markowskei expressed the opinion that escalation of Joshua's situation that night would have been unnecessary. Dr Markowskei is a Senior Career Medical Officer whose report was tendered, but who was not called to provide oral evidence at the inquest.

73. I accept the submissions of Counsel Assisting in reply, that there is no basis upon which to find that Dr Weenink's management of Joshua that night was inadequate. I accept further, that the evidence at inquest established that Joshua's episode of hypotension did not recur and did not appear to have any ongoing clinical significance.

Other events on the night of 17 March 2016

74. Joshua commenced receiving the fluid ordered by Dr Weenink at 8.55pm. He had received all of it by 9.50pm. By this time therefore he had received at least three litres of fluid. After 9.50pm, nursing staff reconnected the third litre of fluid which Dr Re had directed for him, and which had commenced on his arrival on the orthopaedic ward [refer paragraph 39 above].

75. There were three other features of note during the night of 17 March 2016.

76. First, when Dr Weenink assessed Joshua he observed an amount of blood around Joshua's operative site as well as on his bedsheets. However he did not regard this as cause for alarm. He explained that some bleeding was to be expected following shoulder surgery, and in his opinion the amount was not significant. At 6.00am the next morning Joshua's nurse recorded there was no ooze at the surgical site.

77. Secondly, a problem occurred with the siting of Joshua's intravenous cannula, which was delivering both his fluids and his PCA morphine. At 11.00pm it 'tissued', leaking its fluid into tissue surrounding the intravenous site. At midnight the cannula was removed and resited, temporarily suspending Joshua's supply of PCA morphine and fluids.

78. However the problem recurred at 3.00am. It was not until 6.00am that a medical registrar was able to resite the cannula, this time in a vein in Joshua's foot. There was thus a period of two to three hours when Joshua was not receiving pain relief via his PCA. To compensate, at 4.00am he was given an amount of 5mg oxycodone which had been charted in error by Dr Re the previous evening (see para 48 above).

79. The third feature concerns Joshua's receipt of supplemental oxygen. Despite Dr Re's direction that Joshua receive supplemental oxygen at all times while using PCA, the records indicate that until approximately midnight he was receiving room air only. At inquest there was no explanation as to why nursing

staff had not ensured that he receive supplemental oxygen as directed over this period.

80. At around 11.00pm there was a change of nursing shift, and Registered Nurse Pravena Kiran took over Joshua's care. Based on the records, it appears that for the duration of her shift she ensured that Joshua's supplemental oxygen was maintained with nasal prongs, as required.

The medical reviews on 18 March 2016

81. At about 7.00am on 18 March 2016 Joshua was reviewed by two members of Dr Walkers' surgical team, Dr James Karam and Dr Mina Fam (nee Abdel-Malek). They documented that Joshua's observations were stable, the wound was '*clean and dry*', and that he appeared well. Dr Karam noted Joshua's overnight episode of low blood pressure but was not concerned, given its return to normal levels soon afterwards.

82. Their review was followed by one from the hospital's Acute Pain Team. This service is staffed in part by doctors and nurses from the hospital's Anaesthetics Department. The team which reviewed Joshua was headed by consultant anaesthetist Dr Sanjay Satchi. Then as now, Dr Satchi was the director of Liverpool Hospital's Acute Pain Service.

83. Dr Satchi told the court that he regarded Joshua as a '*moderately complex patient*' due to his weight, high risk for sleep apnoea, and hypertension. Overall he thought Joshua looked quite well.

84. However as part of his review Dr Satchi examined the electronic log (known as the PCA log) which provides an objective record of the demands which patients make on their PCA machine. Dr Satchi described feeling '*shocked*' at the large amounts of morphine which Joshua had accessed: 133mgs since 9.00pm the previous evening. This was presumably about the time that his surgical nerve block had worn off.

85. Dr Satchi added that despite this, Joshua did not seem sedated or drowsy during the review and showed no signs of opioid overdose, such as appearing fatigued or too sleepy to maintain a conversation. He attributed Joshua's relative alertness to the likelihood that he was opioid tolerant, due to his use of prescribed opioids after his accident.

86. Nevertheless Dr Satchi's team was concerned that Joshua's pain was not well controlled. He could not be discharged home until he was able to manage his pain with oral analgesics only. Therefore they formed a plan that his baseline pain relief be managed by oral oxycodone, and that he only use his PCA as a back up. The plan was that after review the next morning, Joshua could be weaned off the PCA and be considered for discharge home with oral oxycodone. Dr Satchi made directions in accordance with this plan, in addition to directing that Joshua be maintained on supplemental oxygen.

87. I accept the submission of Counsel Assisting that Dr Satchi's clinical assessments and decisions in relation to Joshua were appropriate, and did not contribute to the cause or manner of his death.

The remainder of 18 March 2018

88. Throughout the day of 18 March 2016 Joshua was in the care of RN Thi Thuy Hang Nguyen. She recorded that he was alert, and was eating and drinking well. At 12.15pm however she documented that he *'has not passed urine since taking care over'* – that is, since 7.00am that morning. At the inquest RN Nguyen explained that she was not overly concerned about this, as she had been informed that Joshua had passed urine overnight.

89. RN Unesjohn Gapasin assumed Joshua's care just after 4.00pm. He recalled that Joshua was in good spirits, and was eating and drinking. At 9.30pm he recorded that Joshua had *'voided in a bottle'*. However since this event was not recorded in Joshua's Daily Fluid Chart, we do not know when this happened or how much urine he passed. At the inquest RN Gapasin acknowledged he ought to have recorded the amount.

90. RN Gapasin's electronic note also recorded that Joshua's *'skin integrity'* was *'intact'*. He explained at the inquest that this entry was in relation to a routine external examination for pressure injuries. According to RN Gapasin, the areas examined would have included Joshua's back, the sacrum and *'the bony prominences'*.

91. RN Kardoli also nursed Joshua during this shift. She recalled that Joshua was in moderate pain, but was alert, conversing and making jokes.

The night of 18 March 2016

92. RN Sunila Sharma was Joshua's allocated nurse for the night of 18 March 2016. Other nurses who were involved in his care that night included RN Remma Kunjappan and RN Nurse Justin Goldrick, who at that time was an Enrolled Nurse.

93. RN Sharma carried out general observations of Joshua at 11.30pm, 1.30am and 3.30am, waking him to do so. His observations were all within the normal range. Notably, on all three occasions RN Sharma recorded that Joshua's oxygen saturations were 100% on room air: that is, <u>without</u> supplemental oxygen.

94. In his oral evidence Dr Satchi found the saturation levels recorded by RN Sharma to be *'surprising'*. He had commented in his statement that they were *'not normal for this patient'*, explaining this was because *'.. his oxygen saturations had been very marginal even with supplementary oxygen, given his recovery from a chest infection and his morbid obesity.'*

95. Dr Satchi's comments are borne out by the records. These show that with one exception, at all other times Joshua's oxygen saturation levels, even on

supplemental oxygen, were closer to 95% and on one occasion were below that. The exception was an observation recorded by RN Sharma at 7.40pm on 17 March, indicating that Joshua's saturations were *above* 100%.

96. Dr Satchi hypothesised that the 100% oxygen saturation readings were an error. In their evidence, Dr Seppelt, Dr Forrest, Dr Lee, Dr Pattullo and Dr Howes agreed that the 100% levels were unlikely to be accurate, taking into account that Joshua was receiving opioid analgesia, was recovering from an upper respiratory tract infection, and had not previously recorded saturation at 100%, with that one exception on the night of 17 March.

97. At the inquest RN Sharma was questioned about the saturation levels she had recorded, but she was unable to provide a coherent explanation for them being at 100% and higher. RN Sharma was also asked why Joshua was not receiving supplemental oxygen during her shift. She replied that she was aware that patients on PCA were required to be maintained on nasal prongs. However she did not appear to accept that she was required to ensure this in Joshua's case, saying only that *'he was happy to be without the nasal prong at that time'.*

98. I accept the submission of Counsel Assisting that it is unlikely the oxygen saturation levels recorded by RN Sharma at the following times are accurate:
    - 7.40pm on 17 March
    - 11.30pm, 1.30am and 3.30am on 18 March.

    The consequence is that there can be no certainty as to what Joshua's oxygen saturation levels were at those times.

99. EN Goldrick recalled that at some time between 4.30am and 5.00am he was asked to assist RN Sharma to sit Joshua up, and then help him to stand so he could pass water into a bottle. His recollection was that Joshua was not in pain or drowsy at this time. EN Goldrick said that as he left the room he saw Joshua reach for food and drink located on his bedside table.

100. Soon after this Joshua told RN Sharma he had a headache, and the medication records show that he was given Panadol at 4.20am. This suggests that the time of EN Goldrick's assistance was likely to have been earlier than he had recalled.

101. RN Sharma said that following this she observed Joshua to be sleeping.

102. Joshua was due for PCA observations at 5.30am. RN Sharma entered his room and began to record the readings on his PCA machine. She then attempted to wake him in order to check his pain score, but Joshua could not be roused.

103. RN Sharma called for help. EN Goldrick entered the room and saw Joshua lying diagonally across his bed. He was not breathing and it appeared he had vomited. An emergency call was made and EN Goldrick commenced CPR, while RN Sharma recorded Joshua's blood pressure as 146/77 and his pulse rate as 112.

104. Despite their best efforts the medical emergency team was unable to resuscitate Joshua. His heart had stopped beating. Tragically he was pronounced deceased at 6.23am.

The PCA log.

105. Joshua's last set of nursing observations was made at 3.30am on the night he died. As noted, he was given Panadol at 4.20am. Thereafter the only objective and contemporaneous evidence we have about his condition derives from his use of pain relief that night, as recorded within the PCA log.

106. Joshua's PCA log was reviewed and analysed by Dr Satchi. Dr Satchi's key observations were as follows:

- Joshua made no use of PCA between the period 10.26pm on 18 March 2016 and 3.53am on 19 March 2016. Dr Satchi thought he may have been asleep during this time.

- in the 49 minutes that followed, Joshua made 19 attempts on the PCA machine, with only 6 being successful. It may be inferred that during this time he was in significant distress or pain (and I note RN Sharma's evidence that Joshua complained of headache within this period). Dr Satchi noted that at around 4.00am Joshua's oral oxycodone, administered 8 hours previously, was likely to be wearing off.

- Joshua's last PCA attempts were made at 4.31am and 4.32am that night. These were unsuccessful, as the machine had gone into *'lock out mode'* so as to prevent overdose.

- overall, in his last 12 hours (from 4.42pm on 18 March to 4.42am on 19 March) Joshua received 42mgs of PCA morphine.

Based on the above, Dr Satchi concluded that Joshua had a strong need for pain relief from 4.00am onwards on the night of his death. This led Dr Satchi to believe that it was unlikely Joshua was affected by opioids in the immediate period leading up to his death.

<u>The cause of Joshua's death</u>

The autopsy report

107. I have noted that an autopsy examination was unable to ascertain the cause of Joshua's sudden death. Dr I'Ons recommended that expert opinion be sought as to the likely causes for Joshua's renal failure, and the contribution of morbid obesity and left ventricular dilation to his death.

108. With the aim of clarifying the cause of Joshua's death, expert medical reports were sought from a number of doctors. Their specialities and subspecialities have been listed at paragraph 9 above.

The expert conclave

109. At the inquest, concurrent expert evidence was given by Dr Lee, Dr Forrest, Dr Seppelt, Dr Pattullo and Dr Howes. The purpose of hearing their evidence in conclave was to identify commonality as to the manner and cause of Joshua's death.

110. All medical experts, with the exception of Dr Pattullo, agreed that the immediate cause of Joshua's death was a cardiac arrhythmia. This describes a situation where the heart beats in an irregular fashion due to malfunction of the electrical signals which coordinate heart beat.

111. Unfortunately however there was limited consensus as to what had brought about Joshua's fatal arrhythmia. Dr Howes observed that Joshua would have been predisposed to cardiac arrest, due to the left ventricular thickness and dilation which were identified at autopsy. These features had probably developed over a number of years as a result of his obesity and hypertension.

112. However in Dr Howes' opinion, the immediate trigger for Joshua's fatal arrhythmia was the presence of severe hyperkalaemia, or high levels of potassium.

113. All expert witnesses remarked upon the very high levels of potassium found in Joshua's blood at the time of his cardiac arrest. This phenomenon, known as hyperkalaemia, is most commonly associated with impaired kidney function or acute kidney injury. Yet Joshua's renal function tests prior to his operation had not identified any abnormalities.

114. Dr Howes stated in his second report that Joshua's serum potassium level was *'within the range commonly found to produce fatal arrhythmias even in normal hearts'*. Dr Lee agreed that severe post operative hyperkalaemia had been a key element in Joshua's cardiac arrhythmia. In his first report he stated that the levels present in Joshua's case *'inevitably would have led to cessation of cardiac electrical activity'.*

115. In his report Dr Forrest expressed a similar opinion that severe hyperkalaemia had triggered Joshua's cardiac arrest:

> *'...Joshua was found to have severe acute renal failure at the time of his death. This finding was highly unusual and unexpected, given his apparently unremarkable clinical course up until that time. In my opinion, Joshua's death was caused by a cardiac arrhythmia due to hyperkalaemia ... which is a complication of renal failure'.*

116. At inquest Dr Forrest modified his opinion somewhat as to whether hyperkalaemia had triggered Joshua's cardiac arrhythmia. He stated that it was difficult to determine whether hyperkalaemia had caused Joshua's cardiac arrest, or was a consequence of it. Nevertheless he expressed that

the former was possible, especially given that the abnormal potassium results were *'the one abnormality or one of the few abnormalities we have to go on...'*

117. For his part Dr Seppelt thought Joshua's high potassium levels may have been *'artefactual'* - that is, caused by the method which had been used to collect his blood during the cardiac arrest, and hence not reflective of the actual amount of potassium in his blood.

118. Responding to this at inquest, Dr Howes expressed doubt that technical issues with blood collection had led to an artefactual result in Joshua's case. He considered that the potassium results were *'most likely correct'*.

119. The weight of the expert evidence supports a finding that post operatively, Joshua developed severe hyperkalaemia and that this condition triggered his fatal cardiac arrhythmia.

120. However for reasons given below, the expert evidence does not permit me to exclude other factors which may have combined with hyperkalaemia to cause Joshua's arrest. Hyperkalaemia therefore cannot be identified as the sole cause of Joshua's fatal arrhythmia.

121. This evidence, together with the evidence as to what may have caused Joshua's hyperkalaemia, is now examined.

What caused Joshua to develop hyperkalaemia?

122. There is no evidence that at any time prior to his surgery Joshua had impaired renal function. Yet blood collected at the time of his cardiac arrest contained high levels of potassium, indicating very severe injury to his kidneys. Post operatively this was the only occasion on which blood testing was performed, so it was not possible to determine at what stage Joshua's renal impairment had developed.

123. At the inquest, members of the expert conclave offered possible explanations for the cause of Joshua's acute kidney injury, as follows:

124. Hypovolemia, a condition of abnormally low blood liquid in the body, which can result in kidney failure. In his first report Dr Lee asserted that Joshua had been given insufficient fluids during and after his operation. This, he said, had combined with blood loss on the night of 17 March 2016 to cause Joshua to become hypovolemic. Dr Lee also identified Joshua's episode of low blood pressure on the night of 17 March 2016 as evidence of hypovolemia.

125. But Dr Seppelt, Dr Forrest and Dr Howes disagreed, citing the absence of clinical signs of hypovolemia, namely significant changes in blood pressure and heart rate.

126. As regards the role of Joshua's blood loss and episode of low blood pressure, I note the opinion of orthopaedic surgeon Dr Bokor, that the amount of bleeding observed from Joshua's shoulder on the evening of 17 March 2016

was '*not out of the ordinary*' for a patient who had undergone this kind of surgery. Furthermore the episode of low blood pressure on the night of 17 March 2016 did not recur. This makes it difficult to conclude that Joshua was showing clinical signs of hypovolemia.

127. As regards Joshua's receipt of fluids I have noted that at inquest, evidence emerged that during and after his operation Joshua received more fluids than had been thought. The amount of fluid exceeded the amount that Dr Lee believed Joshua had been given, when he expressed his opinion that Joshua had not received sufficient fluids.

128. However due to poor record keeping there was no reliable evidence about how much urine Joshua had passed. I accept that as a consequence, it is unclear whether postoperatively Joshua passed abnormally low amounts of urine.

129. Notwithstanding this, the evidence as a whole does not support a finding that Joshua was hypovolemic. Hypovolemia cannot be established as a cause for his kidney failure.

130. An adverse reaction to the medication parecoxib. In his report Dr Forrest noted that parecoxib had been administered to Joshua during his operation, and that in rare cases this is associated with post operative renal failure.

131. Responding to this, Dr Howes stated that this association is only evident in patients with pre existing renal dysfunction, which Joshua did not have. At the inquest Dr Forrest acknowledged that it was unlikely that an adverse reaction to parecoxib had caused Joshua's kidney damage, this being such a rare phenomenon.

132. Rhabdomyolysis, a breakdown of muscle tissue which results in the release of a protein into the blood, leading to kidney damage. Rhabdomyolysis is caused by muscle compression after, for example, a prolonged period of time lying on a hard surface.

133. Dr Lee considered that Joshua was '*particularly prone*' to rhabdomyolysis of his gluteal muscles, due to his large weight and his placement in the beach chair position during surgery.

134. In Dr Lee's opinion, this diagnosis was retrospectively supported by the presence of certain key markers of rhabdomyolysis, being Joshua's high levels of creatinine and potassium, his complaint of buttock pain while he was in the Recovery area, and the conclusion Dr Lee had drawn prior to inquest that Joshua had very low urine output following his surgery. Dr Lee was confident that had blood testing been performed on the day after Joshua's surgery, the results would have raised suspicion for rhabdomyolysis, in the form of elevated levels of the enzyme creatinine kinase.

135. As I have noted, due to the poor state of records regarding the levels of Joshua's urine output it is not possible to assert that these were low.

136. Dr Forrest did not consider himself qualified to offer an opinion on whether Joshua had rhabdomyolysis. Neither Dr Pattullo nor Dr Seppelt offered a firm view on it. Dr Bokor however stated he could find no evidence that Joshua ought to have been diagnosed with this condition.

137. None of Joshua's treating physicians thought rhabdomyolysis was likely to have been present. Dr Re considered the condition more likely in patients who were larger than Joshua, or who had been immobilised in surgery for a longer period. Furthermore she and Dr Roach concurred that the level of pain caused by rhabdomyolysis would be much greater than Joshua's reported levels.

138. Only Dr Howes agreed with Dr Lee that rhabdomyolysis may have been implicated in Joshua's death. For him the feature most suggestive of this condition was Joshua's very high level of potassium, in a person who had normal renal function pre-operatively.

139. Since blood tests were not performed on 18 March 2018, we do not have the benefit of pathology results for the period soon after surgery, which might have shed further light on whether Joshua developed rhabdomyolysis. Given that fact, together with the dissenting medical opinion described above, in my view it has not been proved to the level of reasonable satisfaction that rhabdomyolysis caused or contributed to Joshua's death.

140. In conclusion, I cannot be reasonably satisfied on the evidence that any of the three conditions advanced at inquest can explain Joshua's acute kidney injury.

Did other conditions contribute to Joshua's fatal cardiac arrhythmia?

141. The expert conclave was asked to consider whether two related respiratory conditions were implicated in Joshua's death. These were Opioid Induced Ventilatory Impairment (OIVI) and Obstructive Sleep Apnoea (OSA).

142. Opioid Induced Ventilatory Impairment (OIVI) is a term which describes the potential adverse effects of opioids on a patient's ventilation. The condition encompasses not only respiratory depression, but also sedation and upper airway obstruction.

143. Pharmacologist and toxicologist Dr Olaf Drummer was of the opinion that OIVI was not indicated in Joshua's case. He stated that Joshua's relatively low postmortem levels of morphine and his reported level of alertness at around 4.00am were not consistent with this condition. In their reports and evidence Dr Forrest and Dr Seppelt agreed.

144. But Dr Lee was strongly of the view that OIVI had substantially contributed to Joshua's death, together with acute kidney injury and hyperkalaemia. Dr Lee

based his conclusion in part on his extensive clinical experience of managing patients with morbid obesity and sleep disordered breathing following surgery. In his experience, such patients were extremely sensitive to OIVI and needed continuous monitoring of their oxygen saturation levels, especially when they were asleep. It was during sleep periods, he maintained, that patients with such comorbidities lose the ability to arouse themselves in sufficient time from the effects of airway blockage, an ability which was further suppressed by the effects of opiate medication.

145. Dr Lee strongly maintained this position in a supplementary statement in which he responded to the opinions of Dr Forrest and Dr Seppelt. Dr Lee stated: '*Sudden death during sleep can occur 1-2 days after surgery, may not be associated with somnolence or sedation, and may not be associated with opioid levels a pathologist or pharmacologist would regard as excessive'.*

146. For his part Dr Howes had stated in his first report dated 9 June 2021 that he thought it unlikely Joshua had suffered opiate toxicity. However he conceded he was not an expert in the area of OIVI, and that:

'... in the super obese a more complicated situation may exist with mechanical and central nervous system disorders of ventilation where even low levels of opiate exposure may contribute to death'.

147. Dr Lee has very extensive experience in the post-operative care of patients like Joshua who have multiple comorbidities. Therefore his opinion that OIVI substantially contributed to Joshua's death merits careful consideration.

148. Nevertheless Dr Lee's opinion in this regard was not shared by Dr Forrest, Dr Seppelt and Dr Drummer, all of whom have relevant expertise and experience in this area. Having regard to their dissenting opinions, I cannot be satisfied to the requisite standard that OIVI caused or contributed to Joshua's death.

149. Obstructive Sleep Apnoea [OSA] is relatively well known in the community as a sleep related breathing disorder. It occurs when the throat muscles intermittently block the airway during sleep. Joshua had no formal diagnosis of this condition but had risk factors associated with it, including obesity and hypertension. In addition he had been receiving opioids for pain relief, which as noted by Dr Lee can have the effect of exacerbating the hypoventilation and airway obstruction which occurs with sleep apnoea.

150. But although there was expert consensus that Joshua had a high risk for sleep apnoea, opinion was not unanimous that it had contributed to his death.

151. Dr Pattullo identified OSA as '*almost certainly the only cause'* of Joshua's death, asserting that Joshua's case was a very straightforward example of such a death. He relied on inferences drawn from his analysis of Joshua's PCA log entries in the hours leading up to 5.30am on 19 March 2016, when he was discovered unresponsive. According to Dr Pattullo, the pattern of Joshua's demands on his PCA machine evidenced a pattern of cycling between sleep and arousal that was typical of patients with OSA.

152. Dr Lee regarded OSA as a major contributing factor to Joshua's death, and Dr Seppelt considered that it had *'almost certainly'* contributed. However Dr Forrest and Dr Howes could find no evidence that it was implicated. Dr Howes commented further that contrary to Dr Pattullo's position, OSA could not of itself explain Joshua's death given the severe metabolic disturbances that were also present.

153. The state of the expert evidence makes it difficult to conclude whether OSA contributed to Joshua's death and if so, the extent of its contribution. Dr Lee, Dr Seppelt and Dr Pattullo all have specialties or subspecialities qualifying them as experts in this condition. I note however the dissent of Dr Seppelt, similarly qualified. I note further the absence of a formal diagnosis of OSA in Joshua's case, and the absence of evidence that while he was in hospital Joshua was experiencing obstructed breathing due to OSA.

154. On balance, the evidence does not permit a finding to the requisite standard that OSA contributed to Joshua's death.

155. The conclusion I reach on the basis of the medical evidence, is that the cause of Joshua's death was a fatal cardiac arrhythmia, secondary to acute kidney injury. Although other conditions may have contributed, the extent of their contribution cannot be established.

156. Unfortunately, and particularly so for Joshua's family, the evidence is not capable of establishing with more precision the cause of Joshua's death. The uncertainty cannot be attributed to any lack of assistance from the many clinicians who treated Joshua. All medical practitioners involved in his care provided statements and gave honest oral evidence at the inquest, as for the most part did the nurses involved in his care. In addition, highly qualified expert medical witnesses provided their assistance to the inquest in an attempt to establish the cause.

Were there any deficiencies in Joshua's care and treatment? If so did they contribute to his death?

157. In his first report Dr Lee asserted that:

'Joshua suffered from a predictable series of well recognised problems following general anaesthesia and surgery. The planning, decision making, monitoring and observations were either inadequate or inappropriate'.

158. Dr Lee maintained this opinion in his supplementary report and evidence at inquest, stating in the former that Joshua's death was:
'...predictable and preventable by care guided by reasonable, cautious monitoring, investigations and assessment'.

159. However in his report and evidence Dr Forrest strongly disagreed that Joshua's death was predictable and preventable. In his opinion Joshua's operative and post operative care was consistent with standard, widely

accepted practice. Dr Seppelt agreed, stating in his report that Joshua's clinical management appeared to be *'reasonable and would be widely accepted in Australia by peer professional opinion to be competent professional practice.'*

160. Some of the deficiencies in care which Dr Lee identified were not borne out by the evidence. These included the claims that Dr Walker and Dr Re had given insufficient attention to Joshua's known risks for surgery and anaesthesia, that Joshua had received insufficient fluids intraoperatively and postoperatively, that it was likely he was hypovolemic, and that there was an inadequate response to his episodes of blood loss and hypotension on the night of 17 March 2016.

161. Dr Lee's principal criticism however, articulated in his first report and amplified in his oral evidence, was that post operatively Joshua *'...should have been monitored in a high intensity staffing area such as a high dependency unit'.* In his opinion, due to his high risk Joshua needed at the least, postoperative care within a unit which could provide continuous electronic monitoring of his respiratory function.

162. It is noted that Liverpool Hospital does not have a High Dependency Unit, and that only in its ICU is respiratory monitoring available of the kind described by Dr Lee.

163. Members of the conclave were asked to respond to the question whether, given his level of risk, Joshua ought to have been cared for in the hospital's Intensive Care Unit. The weight of expert evidence did not favour that suggestion.

164. Dr Forrest adverted to the resourcing pressures upon large NSW public hospitals. Within this context he considered it unlikely that Joshua would have met the criteria for admission to the ICU, given that postoperatively he had not demonstrated haematological or respiratory instability. Dr Pattullo agreed, noting that there are no NSW protocols that a high risk patient qualifies for ICU care following surgery.

165. Dr Seppelt stated that he *'mainly'* agreed with Dr Forrest on this point, noting that within the context of what resources were available at Liverpool Hospital, it could not be said that Joshua's postoperative monitoring was inadequate. He did however consider that if there had been ICU bed capacity on the evening of 17 March 2016, Joshua might have been admitted there. However he agreed with Dr Howes that even had this occurred, it was most likely Joshua would have been discharged onto a ward the following morning, given his relative stability at that stage.

166. On the evidence therefore, I do not find that Joshua's postoperative care should been provided in Liverpool Hospital's ICU.

167. In the course of the conclave evidence however, there was some discussion about the desirability of a large hospital being able to offer a special unit which

would have the capacity to monitor respiratory function, albeit not to the level offered within an ICU. Dr Lee told the court that the Australian and New Zealand College of Anaesthetists has previously highlighted a need for obese patients being treated with opioids to have increased and continuous respiratory monitoring.

168. Dr Seppelt noted that NSW Health policy makes provision for certain hospitals to allocate what is referred to as Close Observation Beds, as defined within NSW Health Information Bulletin IB 2020_001. He described these as beds which would enable close respiratory monitoring of patients such as Joshua who were obese, hypertensive and being treated postoperatively with opioids. Dr Seppelt considered that Joshua's postoperative respiratory risk would likely have qualified him for treatment in such a unit, had it existed at Liverpool Hospital.

Two shortcomings in care

169. I have found that there is no evidence of deficiency in Joshua's hospital care which caused or contributed to his death. Nevertheless there was evidence of two particular shortcomings in his care which requires comment.

170. Both Dr Re and Dr Satchi directed that Joshua's urine output be measured and the amounts recorded. There were occasions when nursing staff failed to ensure this happened. Similarly, it was a requirement that while he was using PCA morphine Joshua was to receive supplemental oxygen. At inquest no explanation was offered as to why on occasions this did not happen.

171. It was submitted on behalf of Joshua's family that nursing staff might have better complied with these requirements had Joshua's weight been able to be accurately recorded. Accurate measurement of his weight, it was said, would have placed him in the category of 'super super obese', thus magnifying his risks in the minds of those tasked with monitoring him.

172. There is insufficient evidence to conclude first, that Joshua's actual weight was significantly greater than was estimated, and secondly, that if it was, a more accurate recording would have caused staff to take greater care to ensure he was receiving supplementary oxygen and to record his urine output.

173. Even so it cannot be disputed that on occasions, these requirements were not complied with and that this is a matter for concern. I accept the submission of Counsel Assisting that the appropriate course is to request that Liverpool Hospital and South Western Sydney Local Health District review these findings and take what action they consider is appropriate to address these shortcomings.

Care and treatment of bariatric patients at Liverpool Hospital

174. I have mentioned that since Joshua's death Liverpool Hospital has acquired additional bariatric platform scales for use throughout the hospital. In a

statement provided to the inquest, Mr Scott McGrath who is Acting Director of Nursing and Midwifery at Liverpool Hospital advised that the Pre Anaesthetic Clinic now has a range of scales suitable for bariatric patients.

175. In his statement Mr McGrath also advised that since Joshua's death, the South West Sydney Local Health District has commenced developing a local Bariatric Management Plan for the care and management of obese and super obese patients at Liverpool Hospital. To assist the court, a draft of this Plan was provided.

176. A review of the draft Plan shows that it is mainly concerned with ensuring that appropriate equipment and training is available to hospital staff when caring for obese patients. This is an important component of patient care. However it is of limited relevance to this inquest, which focused upon whether, having regard to his very large weight and accompanying risk factors, the clinical care which Joshua received was appropriate.

177. Because I have not made adverse findings of any substance regarding Joshua's care as a bariatric patient, it would not be appropriate for me to make any further comment on this issue.

Conclusion

178. When Joshua died his family lost a beloved partner, son, brother and nephew. It is especially sad that Joshua's little boy will never know his father, at least not in person. I offer to Joshua's family my sincere sympathy for their loss.

179. I thank Ms Lesley Whalan SC, Mr Matthew Robinson and Mr James Pender for the outstanding assistance they have provided to me in this inquest. My thanks also to the other Counsel involved, and to the Officer in Charge Rebecca Ogle.

Findings pursuant to section 81

Identity
The person who died is Joshua Szczudlo.

Date of death:
Joshua Szczudlo died on 19 March 2016.

Place of death:
Joshua Szczudlo died at Liverpool Hospital.

Cause of death:
Joshua Szczudlo died as a result of a fatal cardiac arrhythmia, secondary to acute kidney injury. Other conditions may have contributed to his fatal arrhythmia but the extent of their contribution is uncertain.

Manner of death:

Joshua Szczudlo died in hospital after undergoing surgery to repair a shoulder fracture.

I close this inquest.

Magistrate E Ryan
Deputy State Coroner
Lidcombe

Date
2 December 2021